

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the subject application. The final Office Action of April 18, 2002 has been received and contents carefully reviewed.

Claims 1-13 are currently pending in the present application. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 1, 2, and 11 under 35 USC § 102(a) as being anticipated by Havemann et al. (US Patent No. 5,891,804). This rejection is respectfully traversed.

Claim 1 is allowable at least for the reason that claim 1 recites a combination of elements including etching a portion of the substrate to form a groove beneath a top surface of the substrate using the photoresist pattern as a mask. None of the cited references teaches or suggests each and every element of the claims.

Column 3, lines 29-38 of Havemann et al. recites "FIG 1B show the structure after the photoresist has been patterned and the underlying layers etched down to the substrate 10."

Therefore, Havemann et al. do not disclose etching a portion of the substrate to form a groove beneath a top surface of the substrate. Applicant submits that layers 44/40/42/30 are the underlying layers in FIGs 2A-2E and 3A-3G of Havemann et al. and are not a "substrate". In contrast, the specification discloses etching a portion of a substrate 1 to form a groove 152.

Havemann et al. does not disclose etching a portion of a substrate to form a groove beneath a top surface of the substrate as recited in claim 1.

Applicant submits that claim 1 is allowable over the cited reference. Applicant respectfully requests that the rejection under 35 USC 102(a) be withdrawn.

Moreover, claims 2 and 11 are allowable by virtue of their dependence on claim 1, which is believed to be allowable.

The Examiner rejected claims 4, 5, 7, 8, and 10 under 35 USC 103(a) as being unpatentable over Havemann et al. as applied to claims 1, 2, and 11 above, and further in view of Senda et al. (US Patent No. 5,364,459); rejected claims 3, 6, and 9 under 35 USC 103(a) as being unpatentable over Havemann et al. and Senda et al. as applied to claims 1, 2, 4, 5, 7, 8, 10, and 11 above, and further in view of Charneski et al. (US Patent No. 6,284,652); and rejected claims 12 and 13 under 35 USC 103(a) as being unpatentable over Havemann et al. and Senda et al. as applied to claims 1, 2, 4, 5, 7, 8, 10, and 11 above, and further in view of (JP 05-265040). These rejections are respectfully traversed.

The Examiner acknowledges that Havemann et al. does not disclose Ag and Au and the material for the reductant. The Examiner cites Senda et al. to cure the deficiencies in Havemann et al. The Examiner acknowledges that Havemann et al. and Senda et al. do not disclose the mixed solution for the electroless plating. The Examiner cites Charneski et al. to cure the deficiencies in Havemann et al. and Senda et al. As discussed above, independent claim 1 recites a combination of elements including etching a portion of the substrate to form a groove beneath a top surface of the substrate using the photoresist pattern as a mask. None of the cited references, singly or in combination, teaches or suggests all of the elements of the claims.

Senda et al. and Charneski et al. fail to cure the deficiencies of Havemann et al. since the dependent claims incorporate all of the elements of the independent claims. Applicant submits that claims 3-10, 12, and 13 are allowable by virtue of their dependence on claim 1, which is believed to be allowable.

Accordingly, for at least these reasons, Applicant respectfully requests that the Examiner withdraw the rejection of claims 3-10, 12, and 13 under 35 USC § 103(a) as based on any combination of Havemann et al., Senda et al. and Charneski et al.

The drawings and the specification have been amended to correct minor informalities.


No new matter has been added.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By 

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Version With Markings to Show Changes Made

Please amend the specification as follows:

On page 2, Paragraph beginning on line 13:

Fig. 1 is a cross sectional view illustrating a typical AM-LCD device. As shown in Fig. 1, the LCD device 20 includes lower and upper substrates [2] 1 and [4] 3, with a liquid crystal layer 10 interposed between the upper and lower substrates. The lower substrate [2] 1 has a thin film transistor "S" (TFT) as a switching element and a pixel electrode 14. The upper substrate [4] 3 has a color filter 8 and a common electrode 12. The pixel electrode 14 is formed over a pixel region "P" and serves to apply a voltage to the liquid crystal layer 10 along with the common electrode 12, and the color filter 8 serves to implement natural colors. A sealant 6 seals edges of the lower and upper substrates [2] 1 and [4] 3 to prevent a leakage of the liquid crystal.

Please amend the claims as follows:

1. A method of manufacturing a thin film transistor for use in an LCD device, comprising:
preparing a substrate and a mixed solution, the mixed solution having a reductant and a first metal;
forming a photoresist pattern on the substrate;
etching a portion of the substrate to form a groove beneath a top surface of the substrate
using the photoresist pattern as a mask;
depositing a second metal on the substrate, a height of the second metal being smaller than a depth of the groove;
removing the photoresist pattern on the substrate and the second metal on the photoresist other than in the groove; and

forming the first metal on the second metal in the groove by submerging the substrate in the mixed solution.